

CLAIMS

1. A vehicle outside-image display apparatus, comprising:
a vehicle outside-image capturing unit that captures a vehicle's outside
5 image by a camera;
an image receiving unit that receives vehicle outside-image information
from outside;
an image combining unit that combines the vehicle outside-image
information received by the image receiving unit with the image captured by the
10 vehicle outside-image capturing unit; and
an image display device that displays renewed vehicle outside-image
information produced by the image combining unit.
2. The vehicle outside-image display apparatus according to claim 1,
15 wherein the image receiving unit receives the vehicle outside-image information
from a vehicle ahead of a vehicle equipped with the vehicle outside-image
display apparatus.
3. The vehicle outside-image display apparatus according to claim 1,
20 wherein the image combining unit combines a portion of the vehicle
outside-image information received by the image receiving unit with the image
captured by the vehicle outside-image capturing unit.
4. The vehicle outside-image display apparatus according to claim 1,
25 further comprising an image transmitting unit that transmits the renewed vehicle

outside-image information produced by the image combining unit to outside.

5. The vehicle outside-image display apparatus according to claim 4,
wherein the image transmitting unit transmits the renewed vehicle
5 outside-image information produced by the image combining unit to a rearward
vehicle relative to a vehicle equipped with the vehicle outside-image display
apparatus.

6. The vehicle outside-image display apparatus according to claim 1,
10 further comprising:

a following distance measuring unit that measures a following distance
between a vehicle equipped with the vehicle outside-image display apparatus
and a vehicle ahead thereof; and

a field-of-vision condition determining unit that determines, with the
15 following distance measuring unit, whether or not a forward field of vision is
blocked,

wherein vehicle outside-image information is received from the image
receiving unit when it is determined that the forward field of vision is blocked by
the vehicle ahead.

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7. The vehicle outside-image display apparatus according to claim 1,
further comprising:

a three-dimensional measuring unit that performs, by a
three-dimensional measuring instrument, a three-dimensional measurement for
25 an environment in a picture range captured by the vehicle outside-image

capturing unit;

a measurement value receiving unit that receives a three-dimensional measurement value from outside; and

5 a viewpoint converting unit that converts the vehicle outside-image information to have a viewpoint from the camera based on the three-dimensional measurement value received by the measurement value receiving unit and supplies the converted information to the image combining unit.

10 8. The vehicle outside-image display apparatus according to claim 7, further comprising a measurement value combining unit that combines the three-dimensional measurement value received by the measurement value receiving unit with the three-dimensional measurement value acquired by the three-dimensional measuring unit.

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9. The vehicle outside-image display apparatus according to claim 8, further comprising a measurement value transmitting unit that transmits a renewed three-dimensional measurement value produced by the measurement value combining unit to outside.

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10. The vehicle outside-image display apparatus according to claim 9, wherein the measurement value transmitting unit transmits the renewed three-dimensional measurement value produced by the measurement value combining unit to a rearward vehicle relative to the vehicle equipped with the
25 vehicle outside-image display apparatus.

11. The vehicle outside-image display apparatus according to claim 1,
wherein the image receiving unit receives vehicle outside-image information
from an obstructive object that obstructs a field of view ahead of a vehicle
5 equipped with the vehicle outside-image display apparatus.